

CAMPxx4x.DAT EDITING e.g. CAMPGR40.DAT

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Rev. 23.08.2002 (edited by Andy)

There is one of these files for each campaign. So there is a German and British 1940 campaign file, a German, British and American 1943 campaign file and a German, British and American 1944 campaign file.

They are each 3708 d bytes long. Each CAMPxx4x.DAT file can be divided in 8 main parts.

In the following description UBYTE means 1 byte, UWORD 2 bytes and ULONG 4 bytes.

1. Campaign setup information : starts at byte 00.

```
00000000 94 07 06 0E 80 00 00 00 80 00 00 00 02 00 1A 00
.....
00000010 0A 00 0A 01 09 00 10 05 0A 07 03 07 00 80 01 07
.....
```

00-01	UWORD	Campaign commencement year. 9407 = 1940, 9507 = 1941, 9607 = 1942, 9707 = 1943, 9807 = 1944, 9907 = 1945
02	UBYTE	Campaign commencement month (Jan-Dec). 00=Jan, 04=May, 06=July, 07=Aug, 0B=Dec
03	UBYTE	Campaign commencement day (1-30). 05 = 05, 0A = 10, 14 = 20, 1E = 30
04-07	ULONG	Briefing language and art. Byte 04-05 8000 = German, 0001 = British, 0002 = American Byte 06-07 are always 0000
08-0B	ULONG	Attacking side. Byte 04-09 8000 = German, 0001 = British, 0002 = American Byte 10-11 are always 0000

In the original 1940 campaigns 8000 is used, Germany attacks. In the original 1943/1944 campaigns always 0002 is used, even in the British CampUK43.dat and CampUK44.dat files. The use of 0002 for both Allies also occurs in other places of the Campxx4x.dat files.

0C-0D	UWORD	Campaign type : the original campaigns seem to have different criteria for when they end, move to next phases, etc. 1940 campaigns have 0200, 1943 - 0300, and 1944 - 0400
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The basic characteristics for a 1940 campaign are escorts and sweeps for the Germans and intercepts for the British. However a 1940 campaign type allows other missions also to occur for both sides. The most difficult to obtain seem to be interdiction missions. But they can be allowed in each campaign phase via Special Events and Special Missions, see below.

The basic characteristics for 1943 and 1944 campaigns are endless intercepts for Germans, endless sweeps for British and endless escorts for Americans. Here also the other mission types can be introduced in each

phase via Special Events and special Missions, see below.

In my old campaign work it was so that to have a more varied mission assignment you needed be an attacker (both sides can be attackers) and the campaign type needed to be 1940 type. Now this probably can be perfected by use of Special Events and Special Missions. Probably the attacker's base and capital and the defender's capital must also be defined correctly to avoid any abnormality in a campaign.

0E-0F	UWORD	Attacking base : corresponds to the number in the list in Tarnames.str 1940 campaigns have 1A00. This is Calais (number 26 d in Tarnames.str) 1943/44 campaigns have 0A01. This is London (number 266 d)
10-11	UWORD	Attacker's capital : Tarnames.str cfr supra 1940 campaigns have 0A00. This is Berlin (number 10 d) 1943/44 campaigns have 0A01. This is London (number 266 d)
12-13	UWORD	Defender's capital : Tarnames.str cfr supra 1940 campaigns have 0A01. This is London (number 266 d) 1943/44 campaigns have 0A00. This is Berlin (number 10 d)
14-15	UWORD	Number of available squadrons number in the corresponding SQxx4x.DAT file In SQGR40.DAT there are 9 German squadrons.
16	UBYTE	Number of Special Events. Maximum 32 special events. See below.
17	UBYTE	Number of Special Missions. Maximum 32 special missions. See below.
18	UBYTE	Number of Phases in the campaign. Maximum 25 phases. See below.
19	UBYTE	Phase lenght in days. The original 1940 campaigns' phases are 7 (07) days, thus one week long. The original 1943/44 campaigns' phases are 30 d (1E h) days, thus one month long.
1A	UBYTE	Number of days between missions. 'Normal' campaign selection (versus 'long') doubles this value.
1B	UBYTE	Number of plane types available. Maximum 30 plane types. See below.

2. Campaign Phases : starts at byte 1C h.

Here begins part of the file that describes the campaign phases. The entire part consist of 25 chunks, each 32(d) bytes long. So maximum 25 (d) campaign phases are possible. 1940 campaigns use only 10 (d) of them.

```

00000010 0A 00 0A 01 09 00 10 05 0A 07 03 07 00 80 01 07
.....
00000020 00 00 00 00 00 00 2C 01 64 00 00 00 00 00 00 00
.....,d.....
00000030 80 00 FF 00 EE 08 FF FF FF FF FF FF 00 80 01 07
.....

```

01	UBYTE	Campaign phase win condition. See Campaign Phase exit condition below.
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02	UBYTE	Campaign phase win parameter. See Campaign Phase exit condition below.
03	UBYTE	Campaign phase loss condition. See Campaign Phase exit condition below.
04	UBYTE	Campaign phase loss parameter. See Campaign Phase exit condition below.

Campaign Phase exit conditions :

00 - No specific condition. Campaign	<p>The campaign phase ends after the number of days specified in the phase loss parameter has passed. This condition is used always with only a few exceptions.</p> <p>The win or loss of this phase is determined by the player rating. If the player rating is more than specified in the Campaign phase win parameter (and this is then always 80 h = 128 d), he wins and receives half points, if not, he loses half points.</p>
01 - Date condition.	<p>The desired length of the phase in days is entered as Campaign phase parameter. In 1940 this is usually 7 days, in 1943/44 usually 30 days.</p>
02 - Target Condition.	<p>All primary targets must be destroyed or hit.</p> <p>This is used only once in the original 1940 campaign and not in the 1943/44 campaigns. The phase where it's used starts on 12 August 1940 and lasts 4 days instead of the more usual 7 days. It is the last phase that Channel convoys are attacked. Primary targets are EE = convoy and 08 = shipyard.</p> <p>The Campaign phase win parameter = minimum target count ratio (?) and is C8 h = 200 d.</p>
03 - Air Superiority Condition.	<p>The attacker must achieve air superiority.</p> <p>Is used only once in the 1940 and in the 1943/44 campaigns. The phase where it's used starts on 1 September 1940 and lasts 14 days instead of the more usual 7 days. In 1943/44 the phase where it's used starts on 1 May 1944 and lasts 60 days instead of the usual 30 days.</p> <p>The Campaign phase win parameter = minimum str. ratio (?) and is always C8 h = 200 d.</p>
04 - Player Rating Condition	<p>When the player rating is more than the Campaign phase parameter the phase ends. This is the condition used for the last phase in a campaign and thus is at the same time the end campaign condition. The player must also have at least 20 missions.</p>
05-20 UWORD x 8 destroyed each (D606 h)	<p>US Industry Production Points for each of the following 8 industries. These are industries located on the US mainland. These industries cannot be and are constant. These Production Points are also added to the British industry.</p> <p>Different values are defined for each of the different industries for each phase of the original campaigns. These values range between 0 and about 1750 d in the original campaigns. In the 1940 campaigns only the Oil and Ball Bearing industries seem to be active.</p>

05-06 : Aircraft industry.
 07-08 : Armaments industry.
 09-10 : Chemical industry.
 11-12 : Oil industry.
 13-14 : Ball bearing industry.
 15-16 : Railyard capacity.
 17-18 : Shipping capacity.
 19-20 : Submarine production.

- 21-22 UWORD German Production Points, modified by destruction of the eight industries located in Germany. Value between 0-100% (00-FF h) (?)
 1940 campaign : only values of 40, 80 and C4 = 25, 50 and 75% (?)
 1943/1944 campaigns : only values of 40, 80, C4 and FF = 25, 50, 75 and 100%
 (?)
- 23-24 UWORD Allied Production Points, modified by destruction of the eight industries located in Great Britain. Value between 0-100 % (00-FF h) (?)
 1940 campaign : always FF = 100% (?)
 1943/44 campaigns : only values of 40, 80, C4 and FF = 25, 50, 75 and 100%
 (?)

To be able to produce new aircraft, repair damaged aircraft, produce special ammunitions, it takes so many Aircraft industry production points plus so many Oil industry production points plus so many Ball Bearing industry production points plus so many Armament industry points etcetera. This probably influences the speed of new aircraft delivery, damaged aircraft repair, delivery of special ammunitions, etcetera in a campaign with limited aircraft and limited resources selected.

These 8 industries in Germany and Great Britain and their Production Points are subject to enemy attack. The above mentioned US Production Points cannot be destroyed, as these industries are located on the US mainland. So destroying an Oil Plant will reduce the Oil industry production points of that country. If enemy bombing attacks destroy Oil Plants, Aircraft Factories, Ball Bearing Plants, Chemical Plants, etcetera, then that country doesn't have enough Production Points for aircraft manufacturing, refueling and repair, etcetera.

- 25-32 UBYTE x 8 Target Priority List.
 List of Target Types that are the priority targets for this campaign phase.

Target Types : The target type and ground object codes are the same. However there are also special codes.

The following table is based on Andy's and PO Prune's work on "target appearance testing".

Bridges can only be targeted on a modified map.

Object Nr.	Hex Code	Target for Escort Missions	Target for Bombing Missions
00	00	Random target	Random target
01	01	Oil Refinery	-
02	02	Ball Bearing Plant	-
03	03	Chemical Plant	-
04	04	Aircraft Factory	-
05	05	Airfield	Airfield

06	06	Armament Factory	-
07	07	Railyard	-
08	08	Shipyard	-
09	09	U-Boat Pen	-
10	0A	V-1 site	
11	0B	Road River Bridge	
12	0C	Road Coast Bridge 1	
13	0D	Road Coast Bridge 2	
14	0E	Rail River Bridge	
15	0F	Rail Coast Bridge 1	
16	10	Rail Coast Bridge 2	
17	11	Heavy Flak (no Briefing)	Heavy Flak
18	12	Light Flak (no Briefing)	Light Flak
19	13	Oil Storage (no Briefing)	Oil Storage (no Briefing)
20	14	Radar Station	Radar Station
21	15	Radar Tower	Radar Tower
23	17	Fort (no Briefing)	Fort (no Briefing)
24	18	Fuel Dump (Airfield)	Fuel Dump (no Briefing)
25	19	AC Tower (Airfield)	AC Tower (no Briefing)
26	1A	Ammo Bunker (Airfield)	-
27	1B	Hangar (Airfield)	-
28	1C	Barracks (no Briefing)	Barracks (no Briefing)
29	1D	Headquarters (no Briefing)	Headquarters (no Briefing)
30	1E	Officers Club (no Briefing)	-
31	1F	Briefing Room (no Briefing)	Briefing Room (no Briefing)
41	29	Warehouse (no Briefing)	-

Fake Targets for spawning people (?)

70	People milling
71	People marching

Special Target Codes

1E	Random Bridge
FF	No target
EF	London
EE	Ship Convoy
ED	Armor
EC	Trucks
EB	V-1 intercept
EA	Scramble
E9	Continental Base

Some notes :

- ‘Target for escort missions’ are the targets that the bombers you have to escort can be ordered to attack, ‘Targets for bombing missions’ are the targets you can be ordered to attack
- The words in parenthesis are the targets you are told to attack in the briefing, if there is written “no briefing” in parenthesis you will be told nothing in briefing, but you see what target to attack in the map. Seems there is no speech file for these targets.
- Andy had a try with all possible Hex-values (00 to FF) so there are no more surprises and no need to try them all again. Ofcourse the special codes were not known when Andy performed his trials. I am sure that these special codes open exciting new interdiction perspectives.
- These target codes in the Campxx4x.dat file were/are a major cause for crashes to desktop in campaigns! It is possible to ‘micromanage’ all the targets and they certainly will be assigned in the

campaign. But target codes that seem to work perfectly in one campaign phase cause VERY persitent and unpassable crashes to desktop in other phases. A solution for this is to use code 00 for all targets, as I did in the Normandy, Ardennes, DAW and Malta campaigns. This eliminates the majority of crashes to desktop and gives you random targets (with a preference for the warehouse).

- However the 'micromanagement' of targets does not lead to crashes to desktop in the original 1940/43/44 campaigns, probably because there are no conflicts between target assignment in the phases of these original campaigns and other parts in the Campxx4x.dat files. Probably crashes to desktop caused by target assignment can be avoided by correctly applying the here described new information on Campxx4x.dat editing.

Examples of phases from the original campaigns :

US44

```
00 80 01 1E 50 00 00 00 28 00 FA 00 FA 00 00 00 00 00 FF 00 40 00 80 00
04 02 09 01 07 06 03 08
```

No phase exit condition so the phase ends after 30 (1E) days, if the player rating is > 128 (80) he wins and receives half points, if not he loses half points. The American Industries produce this phase the following industrial points : Aircraft Industry 80, Armament Industry 0, Chemical Industry 40, Oil Industry 250, Ball Bearing Industry 250, Railyards 0, Shipping 0 and Submarines 256. The German Industry produces at 64 and the British at 128. Primary targets for this phase are : Aircraft Factories, Ball Bearing Factories, Uboat Pens, Oil Plants, Railyards, Armament Factories, Chemical Plants, Shipping yards.

US44

```
03 C8 01 3C E6 00 78 00 64 00 58 02 FA 00 00 00 00 00 FF 00 80 00 FF 00
15 14 04 05 02 01 07 08
```

The win condition is that the attacker must achieve air superiority. The parameter defining this = 200 = C8 = min str. ratio (?). The loss condition is time controlled. The phase lasts 60 days. If there's no air superiority after 60 days the attacker loses this phase. ...

3. Campaign plane types : starts at byte 33C h

Here begins part of the file that describes the aircraft types/slots available for the campaign. The entire part consist of 30 chunks, each 20 (d) bytes long. So maximum 30 (d) aircraft slots can be used in a campaign. The original 1940 campaigns use only 7 of them. The example of two chunks for the P-38H and P-38J is taken from the original CampUS43.dat file.

```
00000330 40 00 40 00 00 FF FF FF FF FF FF FF 00 00 08 01 @.
@.....
00000340 46 00 00 00 2C 01 00 00 00 00 00 00 01 08 0A FF
F.....
00000350 00 00 00 00 2C 01 00 00 E8 03 00 00 02 00 0E 03
.....
```

- | | | |
|-------|-------|---|
| 01 | UBYTE | Aircraft slot number.
00 = P-38H slot, 05 = P-51D slot, 0F = Mosquito slot, 1A = Ju-88C slot, etc.
FF = a special 'slot' number that codes for "No Aircraft".

Example : 00 = P-38H and 01 is P-38J |
| 02 | UBYTE | Starting phase. Phase number in which this plane becomes available.

Example : the P-38H is available from the 1st phase (00), April 1943. The P-38J is available from the phase 08 of the campaign, December 1943. |
| 03 | UBYTE | Ending phase. Phase number in which this plane is withdrawn from the campaign.

Example : the P-38H is withdrawn from service in the phase 08, December 1943.
The P-38J is withdrawn from service in the 11th phase (0A), February 1944. |
| 04 | UBYTE | Replacement aircraft slot. FF = no replacement aircraft type.

Example : the P-38H is replaced by the P-38J when it is withdrawn. The P-38J has no Replacement (FF) when withdrawn. |
| 05-08 | UWORD | Plane Count. Total number of this plane type available to the country (at the start of the campaign).

Example : there are 70 P-38Hs (46 h) available in April 1943 and no P-38Js. |
| 09-12 | UWORD | Plane Production. Base ability of the industry to build and replace this type of aircraft.

This ability is modified by enemy attacks on the above mentioned industry production points.

Example : the ability of the industry to produce P-38s is 300 d (2C01 h) for both the H as J model. This seems logical as they are probably produced at the same factory. |
| 13-16 | UWORD | Start points. How many of certain industry production points are needed to start creating this type of plane. Destruction of industries by enemy bombing attack |

delays the introduction or production of new aircraft types.

Example : the P-38H can be immediately produced as no industry production points are needed, the P-38J needs 1000 d (E803 h) production points for production to start.

Combined with the fact that there are no P-38Js available at the start of the campaign, the Allied aircraft industry needs to be kept intact for P-38J production to be able to start.

So if the Luftwaffe is able to destroy all aircraft factories in the UK then the introduction of all new aircraft types (eg P-51D 1500 d industry points) should be delayed. The same is true ofcourse for German industry and introduction of new aircraft types as Bf 109K-4, FW 190D-9, Me 262 and V-1 needs respectively 3000 d, 2250 d, 3500 d and 2500 d industry production points for production to start.

Keep in mind that there is US based industry that cannot be destroyed, unless you disable it by changing these values to zero in each campaign phase (see 2. Campaign Phases).

4. German forces at the start of the campaign : starts at byte 51C h.

```
00000510 00 00 00 00 00 00 00 00 00 00 00 00 00 80 00 00 00
.....
00000520 00 00 00 00 00 00 FF FF 00 00 00 00 00 00 88 13
.....
00000530 E8 03 00 00 00 00 00 00 00 00 00 00 00 00 00 00
.....
00000540 00 00 00 00 00 00 00 00 00 00 01 00 00 00 00 00
.....
```

01-04	ULONG	Nationality. Byte 01-02 8000 = German. Byte 03-04 are always 0000
05-06	UWORD	Airstrenght. The total number of aircraft in stock at the start of the conflict, with a maximum of about 5000 aircraft. The more aircraft there are in stock the fewer aircraft are produced (because they have enough). This value is always zero (0000 h) in all original campaigns. This means that the original campaigns rely heavily on the industry to produce new aircraft.
07-08	UWORD	Groundstrenght. Seems to be unused (?) by the game designers. This value is also always zero in all original campaigns.
09	UBYTE	Crew quality. 00 = new, 01 = seasoned, 02 = expert. Strangely the Luftwaffe crews are categorized as newbies in 1940 (?), as is the RAF. In 1943/1944 the Luftwaffe again are inexperienced, but the Allied airforces seem to be seasoned (01).
10	UBYTE	Crew morale. Possible values between 00 - FF (h) (h). In all original campaigns crew morale at the start of the conflict is excellent, FF A value of 00 = total defaitism, should result in crews shooting each other.
11-12	UWORD	Repair points. Possible values between 00 00 - FF 00 (h) In all original campaigns repair facilities at the start of the conflict are superb,

FF (h).

- 13-28 UWORD x 8 Industry Production Points for each of the following 8 industries.
These are industries located in the German occupied territories.
- 13-14 : Aircraft industry. Always 00 00 in the original campaigns.
15-16 : Armaments industry. Always 00 00 in the original campaigns.
17-18 : Chemical industry. Always 00 00 in the original campaigns.
19-20 : Oil industry. 5000 d (8813 h) in all original campaigns.
21-22 : Ball bearing industry. 1000 d (E803) in all original campaigns.
23-24 : Railyard capacity. Always 00 00 in the original campaigns.
25-26 : Shipping capacity. Always 00 00 in the original campaigns.
27-28 : Submarine production. Always 00 00 in the original campaigns.
- 29-44 UWORD x 8 Number of factories around the country that are in each of the 8 industries.
All these 8 values are 0000 in all the original campaigns.

5. Allied forces at the start of the campaign : starts at byte 549 h.

```
00000540 00 00 00 00 00 00 00 00 00 00 01 00 00 00 00 00 00
.....
00000550 00 FF FF 00 00 00 00 00 00 00 00 88 13 E8 03 00 00
.....
00000560 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
.....
00000570 00 00 00 00 01 01 07 FF 00 00 00 00 03 01 04 FF
.....
```

This part is exactly the same as described in the previous paragraph. Only some differences are highlighted.

- 01-04 ULONG Nationality.
Byte 01-02 0001 = British, 0002 = American. Byte 03-04 are always 0000
The definition of Allies as 0001 = British in this place occurs only in the British 1940 campaign. In all other campaigns the Allies are defined by 0002 = American, even in the British CampUK43.dat and CampUK44.dat files.
- 13-28 UWORD x 8 Industry Production Points for each of the following 8 industries.
These are industries located in Great Britain.
- 21-22 : Ball bearing industry. 1000 d (E803) in the original 1940 campaign.
2000 d (D007) in the original 1943/44 campaigns.

6. Special events occuring during the campaign : starts at byte 575 h.

This part consists of 32 chunks each 8 bytes long. Each chunk defines a special event that has a chance of happening throughout the career.

In the German and British 1940 campaign 16 respectively 15 events are defined.

In the German 1943 and 1944 campaigns the same 20 events are defined.

In the British 1943 and 1944 campaigns 22 respectively 21 events are defined.

In the American 1943 and 1944 campaigns the same 20 events are defined.

00000570 00 00 00 00 01 01 07 FF 00 00 00 00 03 01 04 FF

01	UBYTE	Event type.	
	00	No Event	
	01	Attack Enemy Capital	Used in all campaigns.
	02	Special Briefing Speech.	Is not used in the original campaigns.
	03	Plane Reinforcement.	Parameter 1 = Plane Slot, Parameter 2 = Number of planes.
	04	Activate Special Mission.	Parameter 1 = Mission number. Is not used in the original campaigns.
	05	New Type Briefing.	Parameter 1 = Type, Parameter 2 = Speech. Is only used once at the start of each 1943/1944 campaign.
	06	Mission Length	Parameter 1 = multiplier (out of 255) Is used 3 times in each 1940 campaign, but I do not understand
the			meaning.
allowed	07	Allow Interdiction	In the German 1943/44 campaigns interdiction missions are in the second campaign phase and when the frontline reaches position 5 (Normandy landing) and 14 (Battle of the Bulge ?). In the Allied 1943/44 campaigns interdiction missions are allowed in the first (?) and 14th phase (June 1944). Sometimes also a Parameter 1 = ? = 01 is used.
	08	Allow Escort	Is only used once in the German and British 1943/1944
campaigns.	09	Allow Sweep	Is only used once in the German 1943/1944 campaigns.
	0A	Force Scramble Mission	Is only used once in the British 1940 campaign.
	0B	Weapons Available	Parameter 1 = Type. Is not used in the original campaigns.
	0C	Activate Frontline	Is used once in all 1943/44 campaigns to activate the moving frontline in the 14th campaign phase (June 1944).
each	0D	Suspend Frontline	Parameter 1 = cmd (?). Is used two times next to each other in 1943/1944 campaign and only to suspend the moving frontline. This has something to do with the Battle of the Bulge frontline, but I don't know exactly what. See the examples below.
	0E	Advance Frontline	Parameter 1 = ? Is used only once in the British and American 1943/44 campaigns. The parameter 1 = 01 (?).
	0F	Don't Escort Primary	Primary what? [Primary flight = your flight?] Is only used in the 1st and 5th German 1940 campaign.
the	10	Change V-1 Speech ID	Is only used once in the 13th campaign phase (May 1944) in 1943 British campaign. Parameter 1 = Attack, Parameter 2 = Bomber. But what does it mean?
unspecified	11	Modify Player Rating	Is used in all campaigns, but only in connection with an special mission (?). There also is a unspecified Parameter 1 = 8000 (128 d) or 80FF (-128 d) (?).
have	12	Withdraw Planetype	Is only used in the Battle of Britain. The game developers must been confused as they order the P-51D to be withdrawn from
			the

	13	Play In Movie	Battle of Britain. Parameter 1 = Plane Type.
	14	Play Out Movie	Parameter 1 = Movie Number
an			Used only in the German Battle of Britain in association with
	15	Activate V-1 Sites	undefined 'special mission'. Parameter 1 = Movie Number
			Is used in all 1943/44 campaigns. Parameter 1 = on/off (01/00)
02	UBYTE	Event Trigger.	
		The special event is triggered when the defined Event Trigger is greater than or equal to the Trigger Parameter.	
	00	Check after every mission.	
	01	When the campaign phase number 00 - 18 h (0 - 24 d) is \geq trigger parameter.	
	02	When the frontline position 00 - 13 h (0 - 19 d) is \geq trigger parameter.	
	03	When the current year is \geq trigger parameter.	
	04	When the Allied Air Strenght/10 (see paragraph 5 above) is \geq trigger parameter.	
	05	When German Air Strenght/10 (see paragraph 4 above) is \geq trigger parameter.	
	06	When we do a "Special Mission" (see paragraph 7 below)	
	07	Undocumented. Used once in each 1943/44 campaign in association with V-1 site activation.	
03	UBYTE	Trigger Parameter. Value from 00 - FF h according to Event Trigger type.	
04	UBYTE	Chance of event actually happening, when it is triggered. 00 - FF h, FF = 100%	
05-06	UWORD	Parameter 1. See Event Type definition.	
07-08	UWORD	Parameter 2. See Event Type definition.	

Examples of Special Events from the original campaigns :

GR40 01 01 07 FF 00 00 00 00
Attack the enemy capital (London), in phase 07, always.

UK40 03 01 04 FF 09 00 64 00
Plane reinforcements under the form of 100 Hurricanes arrive, always, in campaign phase 04.

GR43 05 00 00 00 04 00 96 00
New type of briefing, after every mission, type 04, speech 96 h (?)

GR40 06 01 04 FF 80 00 00 00
The mission lenght is modified, in phase 04, always, multiplier = 80 h (?)

GR43 07 02 0E FF 00 00 00 00
Allow interdiction missions when the frontline has reached position 0E (Battle of the Bulge ?).

US43 07 01 0E FF 01 00 00 00
Allow interdiction missions in campaign phase 0E (June 1944).

GR43 08 01 08 FF 00 00 00 00
Allow escort missions in campaign phase 08 (December 1943).

GR43 09 01 04 FF 00 00 00 00

Allow sweep missions in the campaign phase 04 (August 1943)

UK40 0A 01 05 C0 00 00 00 00
Force scramble missions in campaign phase 05. The chance for actual scrambles is 75% (C0 h)

GR44 0C 01 0E FF 00 00 00 00
Activate the moving frontline in campaign phase 0E (June 1944).

GR44 0D 02 0C FF 01 00 00 00
0D 01 14 FF 00 00 00 00
Suspend the moving frontline when frontline 0C is reached and Parameter 1 = cmd (?) = 01.
Frontline 0C is the last frontline before the Battle of the Bulge commences.
This special event is then followed by : suspend the moving frontline when campaign phase 20 (December 1944) is reached.
These commands have obviously something to do with a Battle of the Bulge scenario, but I don't know yet exactly what.

US44 0E 06 00 FF 01 00 00 00
Advance the moving frontline when a special mission is assigned. Parameter 1 = ?

GR40 0F 01 00 FF 01 00 00 00
0F 01 05 FF 00 00 00 00
Don't escort the primary (?) in the 1st and 6th phase (?). Parameter 1 = 01 (?)

UK43 10 01 0D FF 96 00 00 00
Change V-1 speech in campaign phase 0D (May 1944). Primary 1 = Attack V-1 = 96 = UK
Briefing speech 150 (destroy flying bomb launch site).

UK40 11 06 00 FF 80 00 00 00
Modify the player's rating when he flies a special mission. What special mission? Parameter 1 = ?

GR40 12 01 06 FF 05 00 00 00
In the 6th campaign phase, the P-51D (!) is withdrawn from the Battle of Britain.

US43 13 01 0E FF 02 00 00 00
Play In Movie number 2 when the 14th phase starts in June 1944.

GR40 14 06 00 FF 01 00 00 00
Play 'Out Movie' number 1 when we fly a further undefined 'special mission'.

7. Special missions that the player can be assigned during the campaign : starts at byte 675 h.

This part consists of 32 chunks each 64 bytes long. Each chunk defines a special mission that the player can be assigned during the campaign.

In the German and British 1940 campaign 5 respectively 2 special missions are defined.

In the German 1943 and 1944 campaigns 10 respectively 9 special missions are defined.

In the British 1943 and 1944 campaigns 15 respectively 13 special missions are defined.

In the American 1943 and 1944 campaigns 19 respectively 11 special missions are defined.

```
00000670 00 00 00 00 02 FF 00 00 01 04 05 00 E7 00 EF 00
.....
00000680 F2 00 EB 00 00 00 00 00 00 00 00 01 00 00 01
.....
00000690 7D 00 FF FF 7E 00 7F 00 00 00 00 00 00 00 00 }...
~.....
```

```

000006A0 01 00 00 00 00 00 00 01 FF FF FF FF 00 00 00 00
.....
000006B0 FF FF FF FF 02 FF 04 00 00 04 05 00 E7 00 EF 00
.....

```

- | | | |
|-------|-----------|--|
| 01 | UBYTE | Special Mission Trigger |
| 00 | | Unused |
| 01 | | When a special event happens.
Not used in original campaigns. |
| 02 | | When a campaign phase is reached. Parameter = number of phase. (Phase1=01)
This trigger is mostly used in the original campaigns, except the 1943/44 German campaigns. |
| 03 | | When our capital is attacked.
Not used in original campaigns. |
| 04 | | When this specific mission number is reached.
Not used in original campaigns. |
| 05 | | When any other special mission has been activated.
Not used in original campaigns. |
| 06 | | When a frontline is reached. Parameter = number of frontline.
Used frequently and especially in German 1943/44 campaigns. |
| 07 | | When the V-1 becomes available to Germany. |
| 08 | | When a specific date is reached. Parameter = 0xddmy (y = 0-5)
Is only used to trigger Operation Bodenplatte on 1 January 1945 and only in the German And British 1943/44 campaigns. A bombing attack on the continental airfields respectively a scramble is ordered. |
| 09 | | When the Battle of the Bulge happens (?). Parameter is 0C, 0D or 0E (?). |
| 02 | UBYTE | Chance of the special mission being assigned. 00 - FF, FF = always |
| 03-04 | UWORD | Trigger Parameter. |
| 05 | UBYTE | Mission Type.
00 = Escort, 01 = Sweep, 02 = Bomb, 03 = Intercept, 04 = Interdict
This causes very often that your special mission is not accepted by the exe. 00 (escort) and 02 (bomb) work fine if the targets are set up properly. The working of other missions types may be dependent on the targets types (maybe sweeps to airbases only). This needs to be investigated further. |
| 06 | UBYTE | Number of valid targets in the Target List (see below).
The actual targets are randomly chosen |
| 07-08 | UWORD | Target Type. (See the Target Types list in paragraph 2. Campaign phases above)
Example : 05 = airfield, 0A = V-1 site, 15 = radar tower, ...
Target locations (bytes 09-24) are choosen when this byte is not set up properly.
You can also choose a specific target at the specified target location. Example:
Target location: 1301H (275d) Ventnor, target type can be 14H (radar station) or 15H (radar tower) |
| 09-24 | UWORD x 8 | Target Location List.
A list of maximum 8 target locations where the above mentioned Target Type will be assigned by the campaign engine. A target corresponds to a number in the list in the Tarnames.str file.
Example: 0A01H is (266d) London, 0501H (261d) is Southampton.
Best you check the location in the game with free view to get to know what |

target types are available at this specific target location.

25	UBYTE	Random Time. 00 = no, 01 = yes
26	UBYTE	Hour
27	UBYTE	Minutes
28	UBYTE	Weather 00 = random, 01 = clear, 02 = partly cloudy, 03 = heavy clouds, 04 = overcast (?)
29-44	UWORD x 8	Special Speech List. Special briefing speech instructions. These numbers refer very nicely to the briefing sounds to be found in GRBRIEF.CDF, UKBRIEF.CDF and USBRIEF.CDF. Special numbers are : FFFF = -1 = zoom to map and tell the target FEFF = -2 = zoom to map only FDFF = -3 = tell target only FCFF = -4 (?)
Example (see GRBRIEF.CDF): 0200 0100 FEFF 2600 FDFF 7E00		
'Meine Herren (gentlemen)' 'Guten Morgen (good morning)' [Zoom to map] 'Fliegen sie engen Begleischutz. Ziel: ('Fly close escort. Target: ' [the target is told] 'Die Bomber greifen Geleitzüge im Ärmelkanal an...' ('The bombers attack convoys...')		
You can put in something unusual here during testing to recognized quickly if this special mission is choosen by eaw.exe.		
45-52	UBYTE x 8	Standard Speech List. These are 8 switches (00-07) that can be turned on (01) and off (00). Byte 00 = Opening, Byte 01 = Long opening, after the Special Speech discussion of : Byte 02 = Target Area, Byte 03 = Mission Type, Byte 04 = Mission Objective, Byte 05 = Flak, Byte 06 = Enemy Fighters and Byte 07 = Weather conditions.
53-54	UWORD	Success Event. Number of Special Event that happens if the mission is a success. FFFF means: no special event happens
55-56	UWORD	Fail Event. Number of Special Event that happens if the mission is a failure. FFFF means: no special event happens
57-58	UWORD	A Secondary Flight is created : 00 = random, 01 = always
59-60	UWORD	The Secondary Flight has the same target : 00 = no, 01 = yes
61-62	UWORD	Formation type. 9407 = 1940, 9707 = 1943, 9807 = 1944, 9907 = 1945 type formation FFFF = -1 = ? FEFF = -2 = 2 plane formation
63-64	UWORD	Altitude in feet. Is used once in the American 1943/44 campaigns : 10000 feet, the majority uses the strange FFFF = -1 = ?

Examples of Special Missions from the original campaigns :

GR40

02 FF 04 00 00 04 05 00 E7 00 EF 00 F2 00 EB 00 00 00 00 00 00 00 00 00
00 08 00 01 80 00 FF FF FC FF 81 00 82 00 00 00 00 00 00 00 01 00 00 00
00 00 00 01 0D 00 FF FF 01 00 00 00 FF FF FF FF

When the phase is, always, 5th phase, escort mission, target list of 4 targets, target type is airfield, targets are Manston, Hawkinge, Lympne and Eastchurch, time of day not random, 08 hours, 00 minutes, weather clear, special speech list GR briefing sound 128 (Adler Tag), 129 (the bombers will destroy all fighters on the ground) and 130 (don't worry the bombers cannot destroy all fighters), zoom to target area and discuss it, FFFC = -4 = ?, standard opening speech before the special speech, briefing of the weather conditions after the special speech, if we succeed special event 0D should happen (in this campaign modification of the player's rating), if we fail no special event happens (as the special event that should happen is FFFF = -1), there is always a second flight but with a different target, formation = FFFF = -1 (?), altitude = FFFF = -1 (?).

GR44

06 FF 01 00 04 00 ED 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01 00 00 01 88 00 FE FF 89 00 00 00 00 00 00 00 00 00 00 01 00 00 00
00 00 01 01 FF FF FF FF 00 00 00 00 99 07 FF FF

When the frontline is, always, frontline 01 (first Normandy frontline), interdict mission, no target list, target type is **armor**, no targets, time of day is random, weather clear, special speech list GR briefing sound 136 (the enemy is landing in Normandy) and 137 (destroy them before a beachhead is established), zoom to the target area without discussing it, standard opening speech before the special speech, discussion of enemy fighters and weather after special speech, if we succeed and if we fail no special event happens, random secondary flight with different target, formation 9907 = 1945 type, altitude = FFFF = -1 (?).

UK43

07 FF 00 00 02 08 0A 00 60 00 86 00 9B 00 A1 00 56 00 5D 00 88 00 1A 00
01 00 00 01 94 00 95 00 00 00 00 00 00 00 00 00 00 00 00 01 00 01 01
01 01 01 01 0B 00 0C 00 01 00 00 00 FF FF FF FF

When V-1 becomes available, always, bombing mission, target list of 8 targets, target type is **V-1 site**, targets are Mimoyecques, Siracourt, Watten, Wizernes, Londinieres, Martinvast, Sottevast and Calais, time of day random, weather clear, speech list UK briefing sound 148 (Buzz bombs) and 149 (must be destroyed), standard opening speech before special speech, discussion of target area, mission type, mission objective, flak, enemy fighters and weather after the special speech, if we succeed special event 0B and if we fail special event 0C (in this campaign both are a modification of player's rating) should happen, there is always a secondary flight, with different target, formation and altitude FFFF = -1 (?).

UK44

08 FF 05 00 03 00 EA 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01 00 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 FF FF FF FF 00 00 00 00 FF FF FF FF

When date is reached, always, 1 January 1945, intercept mission, no target list, target type scramble, random time of day, weather clear, no special briefing speech, no special event when success or failure, random secondary flight with different target, formation and altitude (?).

GR43

08 FF 05 00 02 00 E9 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01 00 00 01 93 00 FF FF 94 00 00 00 00 00 00 00 00 00 00 01 00 00 00
00 00 00 00 FF FF FF FF 00 00 00 00 FF FF FF FF

When date 1 January 1945 is reached, always, bombing mission, no target list, target type **continental bases**, random time of day, weather clear, special GR briefing speech 147 (Operation Bodenplatte) and 148 (keep absolute radio silence), ...

US44

```
09 FF 0C 00 04 00 ED 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01 00 00 03 9A 00 FE FF 9B 00 00 00 00 00 00 00 00 00 00 00 01 00 00 00
00 00 01 01 0D 00 0D 00 00 00 00 00 FF FF FF FF
```

When the Battle of the Bulge happens, always, parameter 0C (?), interdiction mission, no target list, target type is **armor**, random time of day, weather heavy clouds, special US briefing speech 154 (the enemy attacked in the Ardennes) and 155 (you must provide tactical support), zoom to target area without discussion, when succesful or failure special event 0D (suspend the moving frontline) should happen, ...

US44

```
09 FF 0E 00 00 08 05 00 10 00 9E 00 5B 00 C6 00 DB 00 2E 00 35 00 C7 00
01 00 00 03 9E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00 01 01
01 00 01 01 0D 00 0D 00 00 00 00 00 99 07 10 27
```

When the Battle of the Bulge happens, always, escort mission, target list of 8 targets, target type airfield, targets are Bonn, Wiesbaden, Mannheim, Merzhausen, Rhein-Main, Frankfurt, Darmstadt and Nidda, random time of day, weather heavy clouds, special US briefing speech 158 (maximum effort against selected German airfields), ..., second flight random with other target, 1945 formation, 10000 feet altitude.

7. Special case for V-1 missions : starts at byte E75 h.

This final and short part describes which speech to play in case of different V-1 related missions.

In the 1940 campaigns these values are always FFFF. In the German 1943/44 campaigns they also are not used.

01	UWORD	V-1 Site Attack Speech British 43/44 : UK Briefing speech 130 in 1943, speech 150 in 1944 American 43/44 : US Briefing speech 131
02	UWORD	V-1 Site Escort Bombers Speech British 43/44 : UK Briefing speech 132 American 43/44 : US Briefing speech 133
03	UWORD	V-1 Intercept Speech British 43/44 : UK Briefing speech 146 Not used in American 43/44 campaign
04	UWORD	V-1 Ground Control related Speech British 43/44 : UK Briefing speech 144 Not used in American 43/44 campaign

8. How to make Special Missions and Special Events work (by Andy)

Select one squad of your campaign that starts at the beginning (phase 1) and enable the first special mission in sq****.dat for this squad. It will be your special mission testing squad.

Enable the special missions in camp****.dat (byte 17H). Now the work can begin.

Make the first special mission phase triggered: 02 FF 01 00 (all HEX) this means: special mission is phase triggered (02H), will always happen (FFH), starting phase is 1 (0100H).

So your new special mission will be the first mission flown by your testing squad and you can check if it works properly by starting a new campaign.

Now choose some unusual special briefing speech (Bytes 29-44). So you will already at beginning of the briefing recognize if EAW runs this special mission and you can leave EAW already at this point if it doesn't work by pressing Alt-Q. This saves a lot of time. EAW will choose another mission from the specified missions in sq****.dat & camp****.dat (campaign phases) if your special mission is not accepted. Get back to your Hex Editor and change something in these special mission bytes until it works. If your special mission works perfectly you can alter the Special Mission Trigger (Byte 01) (and the speech) to fit to your campaign and copy all the bytes to the special mission 'slot' of your choice. Then go on with the next special mission. Good luck.